

REMARKS

Reconsideration and allowance of the subject patent application are respectfully requested.

Claims 1-3, 5-8 and 10-17 were rejected under 35 U.S.C. Section 103(a) as allegedly being “obvious” over Taku (JP 2000-112435) in view of De Lange (U.S. Patent No. 5,719,593).

As described by way of illustration without limitation in connection with an example embodiment of the subject application, different refresh rates and different scanning sizes are associated with the respective areas “A” and “B” in Figures 2 and 9. See, e.g., page 13, line 10 to page 16, line 1. A whole (full) display scan and a partial display scan are made periodically, and therefore the example display can always provide a whole (full) display mode.

While not acquiescing in the rejection based on Taku and De Lange, independent claims 1, 5, 6 and 10 have been amended to describe that the partial display area has a refresh rate different from a refresh rate of the whole display area and has a scan size different from a scan size of the whole display area.

Taku discloses a display apparatus having a “wait” mode in which an area “D” is in a display state, while the remainder of the screen is in a non-display state. See, e.g., Figure 1. This enables the display apparatus to have “interest and creativity while keeping a low power consumption property...” Either the position, the area, or the display content of the area D is changed at certain time intervals.

As noted, Taku discloses a driving method in which one area is in a display mode and the other area is in a non-display mode. Because this other area of Taku is in a non-display mode, Taku does not disclose or suggest a whole screen display area and a partial screen display area arranged in the manner specified in claims 1, 5, 6 and 10.

Moreover, Taku contains no disclosure of a full-screen memory and a partial screen memory as specified in independent claims 1, 5, 6 and 10. In particular, Taku discloses that X driver 5 may include a display data RAM, but there is certainly no disclosure of full screen and partial memories as claimed. See also page 3 of the 5/8/2006 Office Action (“Taku also does not teach a partial screen memory, provided in addition to the full screen memory, for storing therein data of at least one frame for a partial display area.”) In addition, because the screen of

• Taku other than area D is in a non-display state, Taku does not disclose image-display-section refreshing and partial-display-area refreshing sections as further specified in claims 1, 5, 6, and 10. See also page 3 of the 5/8/2006 Office Action (“... Taku does not teach that the refreshing of data written in the partial display area is performed after the data is held for a period shorter than the holding period of the image display section.”) With respect to claims 5 and 10, Taku also fails to disclose writing predetermined color data, as a border line between a partial display area and another area.

De Lange is applied in the office action as allegedly curing the deficiencies of Taku. De Lange is directed to an image processing system that processes background and foreground images and stores a combined image in a single frame buffer.

First, De Lange does not remedy the deficiencies of Taku with respect to the full and partial display areas.

Second, the office action acknowledges that De Lange does not disclose the claimed full screen memory and partial memory, but alleges that “[o]ne of ordinary skill in the art, would recognize that similarly, to provide simultaneous access, two memories could be provided with one for the background (full screen) and one for the foreground (partial screen)” and that “[t]his is functionally equivalent to De Lange’s method and is considered a variation.”

Applicants respectfully submit that the office action relies on improper hindsight to construe De Lange as suggesting the use of both a full screen memory for storing data therein of at least one frame for the whole display area and a partial screen memory for storing therein data of at least one frame for the partial display area as specified in claims 1, 5, 6, and 10. Figure 3 and the corresponding description show that De Lange renders an image on video display 80 from the single frame buffer 60 and De Lange emphasizes that the provision of a single frame buffer is an “object of the invention.” De Lange, col. 1, lines 54-55 (“It is an object of the invention to provide an image processing system capable of combining background and foreground images into a single frame buffer ...”) (emphasis added). In addition, the title of the De Lange patent is “Single Frame Buffer Image Processing System”. In view of the emphasis in De Lange on a single frame buffer, Applicants submit that De Lange clearly and expressly teaches away from providing separate full screen and partial screen memories for Taku.

• Third, Applicants respectfully submit that no motivation exists to provide Taku with full screen and partial screen memories. The office action alleges that the proposed combination would, for example, "facilitate the display of both foreground and background images efficiently." However, Applicants do not understand Taku to be concerned with the display of foreground and background images and traverse any contention that it would have been obvious to modify Taku in view of such considerations. Moreover, inasmuch as Taku already allegedly provides for "low power consumption" by virtue of its non-display portion, it is not clear how modifying Taku based on the full-screen display of De Lange would "reduce" the already allegedly "low power consumption."

Fourth, in response to the arguments made in the response of February 16, 2006 to distinguish independent claims 5 and 10 from the proposed combination of Taku and De Lange, the examiner responds:

...since the foreground and background usually constitutes different colors and the mixing would naturally become a third and different color. This is a predetermined color since the color of the border is determined by Taku's control section prior to being applied to the display. Moreover, being predetermined does not necessarily mean being independent from the colors of the foreground and background.

Each of the independent claims 5 and 10 calls for the writing of predetermined single color data, as a border line, on a border between a partial display area and the whole display area. By way of example without limitation, the subject patent application mentions white or black as illustrative single color borders. See, e.g., pages 31 and 32.

The office action does not specifically address how a single color is obtained by the foreground/background mixing in De Lange. Indeed, because the colors of foreground and background graphic or video images would presumably change in the so-called "mixing area", the mixing mentioned in the office action would in fact result in various different colors (not a single color) in the mixing area (i.e., along the border) in dependence on the changing foreground/background image colors.

Consequently, Applicants respectfully submit that, for at least these reasons, the proposed combination of Taku and De Lange would not have made the subject matter of the pending claims obvious.

NAKANO et al.

Appl. No. 10/617,386

Amendment Accompanying Request for Continued Examination

New claims 18 and 19 have been added. Claim 18 is directed to a display apparatus in which a control section thereof refreshes image data from a full screen memory written to a first display area at a first refresh rate and refreshes image data from a partial screen memory written to a second display area smaller than the first display area at a second refresh rate greater than the first refresh rate. Neither Taku nor De Lange alone or in combination discloses or suggests such a display apparatus and thus claim 18 and its dependent claim 19 are believed to be patentably distinguish over these references.

The pending claims are believed to be allowable and favorable office action is respectfully requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By:



Michael J. Shea
Reg. No. 34,725

MJS:dbp
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100